

Replaced
by
Art. 34

CLAIMS

1. A screening element (A, B, C, D) which includes a body (12) with an upper screening surface (70), a lower discharge surface (72), a plurality of beam formations (16) each of which extends at least partially across the body, at least a first plurality of apertures (18, 20) in the body defined by the beam formations and a reinforcing frame (14) which is at least partially embedded in the body, characterised therein that the frame is made of a first plastics material.
2. A screening element according to claim 1 characterised therein that the frame is rectangular in outline and defines at least one rectangular opening (127A, B) with a plurality of inner corners (128A, B, C, D).
3. A screening element according to claim 2 characterised therein that at least one of the inner corners is curved to provide an expansion point.
4. A screening element according to claim 2 characterised therein that at least one of the inner corners is slotted (130) to provide an expansion point.
5. A screening element according to any one of claims 1 to 4 characterised therein that the frame includes at least one cross member (126).
6. A screening element according to any one of claims 1 to 5 characterised therein that the first plastics material is known by the trade name DURATHANE BKV30™.
7. A screening element according to any one of claims 1 to 6 characterised by a plurality of keying formations (132, 134, 136, 138) on the frame.
8. A screening element according to claim 7 characterised therein that each of the keying formations is in the form of a groove (134), spigot (136) or aperture (138).
9. A screening element according to any one of claims 1 to 8 characterised therein that a plurality of spacers (140) are integrally formed on the frame.
10. A screening element according to any one of claims 1 to 9 characterised therein that in cross-section the frame has a slenderness ratio of between 2:5 and 2:3.
11. A screening element according to claim 10 characterised therein that the slenderness ratio is 2:4.

12. A screening element according to any one of claims 1 to 11 characterised therein that the body is made of a second plastics material.
13. A screening element according to claim 12 characterised therein that the first plastics material has a greater density than the second plastics material.
- 5 14. A screening element according to claim 12 or 13 characterised therein that the second plastics material is polyurethane.
15. A screening element according to any one of claims 1 to 14 characterised therein that the body includes a plurality of location formations (120).
16. A screening element according to any one of claims 1 to 15 characterised in
10 that a tag (152) is located in the body.
17. A screening element according to claim 16 characterised therein that the tag is in the form of an electronic device.
18. A screening element according to any one of claims 1 to 17 characterised therein that in cross-section at least one beam formation includes a tapered section
15 (74) and a support section (76).
19. A screening element according to claim 18 characterised therein that the tapered section has an enlarged base (80) facing towards the screening surface and a narrow neck (82) facing towards the discharge surface.
20. A screening element according to claim 19 characterised therein that the
20 support section is attached to the neck of the tapered section.
21. A screening element according to claim 18, 19 or 20 characterised therein that the support section includes a reinforcing insert (78).
22. A screening element according to any one of claims 18 to 21 characterised therein that the tapered section and the support section are integrally formed.
- 25 23. A screening element according to any one of claims 18 to 22 characterised therein that the tapered section has a reducing taper from the screening surface towards the discharge surface and the support section is located between the tapered section and the discharge surface.
24. A screening element according to any one of claims 1 to 23 characterised
30 therein that the first plurality of apertures are in communication with one another.

25. A screening element according to any one of claims 1 to 24 characterised therein that each of the first plurality of apertures is of a first shape.

26. A screening element according to claim 25 characterised therein that a second plurality of apertures (26) are defined between at least two of the beam formations.

27. A screening element according to claim 26 characterised therein that the second plurality of apertures are in communication with one another.

28. A screening element according to claim 26 or 27 characterised therein that each of the second plurality of apertures is of a second shape.

29. A screening element according to claim 28 characterised therein that the first and second shapes are different from one another.

30. A screening element according to claim 28 or 29 characterised therein that the first and second shapes are selected from a square shape, hexagonal shape or octagonal shape.

31. A screening element according to any one of claims 1 to 24 characterised in that a plurality of first cross members (32) extend from at least one beam formation in a first direction (34) and a plurality of second cross members (36) extend from the one beam formation in a second direction (36) which is opposite to the first direction, each of the second cross members being directly opposite a respective first cross member.

32. A screening element according to claim 31 characterised therein that each of the first and second cross members extends at a right angle from the one beam formation.

33. A screening element according to any one of claims 1 to 24 characterised therein that each beam formation has a screening formation (42) with a first screening section (44) which extends in a first direction (34), a second screening section (46) attached to the first screening section which extends in a second direction (48) which is different from the first direction, a third screening section (50) attached to the second screening section which extends in a third direction (38) which is opposite to the first direction and a fourth screening section (52) attached to the third screening section which extends in the second direction.

34. A screening element according to claim 33 characterised therein that each of the first plurality of apertures (18D) is rectangular in outline.
35. A screening element according to claim 33 characterised therein that each of the first plurality of apertures is square in outline.
- 5 36. A screening element according to claim 34 or 35 characterised therein that each of the first plurality of apertures is bordered on three of its four sides by the first, second and third screening sections.
37. A screening element according to any one of claims 33 to 36 characterised therein that the second direction is at a right angle to the first direction.
- 10 38. A screening system which includes a screening element according to claim 16 or 17 and characterised in that it includes a sensor (154) for monitoring the presence or absence of the tag.
39. A screening system according to claim 38 characterised in that it includes an alarm (156) and that the sensor provides an output (155) to the alarm.
- 15 40. A method of manufacturing a frame for a screening element according to any one of claims 1 to 39 characterised therein that it includes the step of forming a frame body (14) from a first plastics material.
41. A method of manufacturing a frame for a screening element according to claim 40 characterised therein that the frame body is formed in an injection molding
- 20 step.
42. A method of manufacturing a frame for a screening element according to claim 40 or 41 characterised therein that the first plastics material is known by the trade name DURATHANE BKV30™.
43. A method of manufacturing a frame for a screening element according to
- 25 claim 40, 41 or 42 characterised therein that it includes the step of forming a plurality of keying formations (132) on the frame body.
44. A method of manufacturing a frame for a screening element according to claim 43 characterised therein that each of the keying formations is in the form of a groove (134), spigot (136) or aperture (138).

45. A method of manufacturing a frame for a screening element according to any one of claims 40 to 44 characterised therein that it includes the step of integrally forming a plurality of spacers (140) on the frame body.

46. A method of manufacturing a frame for a screening element according to any one of claims 40 to 45 characterised therein that the frame body is rectangular in outline and defines at least one rectangular aperture (127A, B) with a plurality of inner corners (128A, B, C, D).

47. A method of manufacturing a frame for a screening element according to claim 46 characterised therein that it includes the step of forming a slot (130) in at least one of the inner corners.

48. A process for the manufacturing of a screening element according to any one of claims 1 to 39 characterised therein that it includes the steps of:

- (a) forming a frame (14) from a first plastics material; and
- (b) molding a screen body (12) from a second plastics material at least partially around the frame.

49. A process for the manufacturing of a screening element according to claim 48 characterised therein that the frame is molded in a first injection molding step and the screen body is molded in a second injection molding step.

50. A process for the manufacturing of a screening element according to claim 48 or 49 characterised therein that the first plastics material has a greater density than the second plastics material.

51. A process for the manufacturing of a screening element according to claim 48, 49 or 50 characterised therein that the first plastics material is known by the trade name DURATHANE BKV30™.

52. A process for the manufacturing of a screening element according to any one of claims 48 to 51 characterised therein that the second plastics material is polyurethane.

53. A process for the manufacturing of a screening element according to any one of claims 48 to 52 characterised therein that the frame is placed in a dieset (141) wherein the screen body is injection molded.